



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,062	06/29/2005	Denise Marian Bakker	4662-34	6108
23117 7590 12/04/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
NDUBIZI, CHUKA CLEMENT				
ART UNIT		PAPER NUMBER		
3743				
MAIL DATE		DELIVERY MODE		
12/04/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,062

Applicant(s)

BAKKER ET AL.

Examiner

CHUKA C. NDUBIZU

Art Unit

3743

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on through September 3 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Individual Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Amendment

Applicant's amendments filed on May 15 2008 and response file on September 3 2008 are hereby acknowledged. The office action mailed on August 20 2008 has been withdrawn and claims 1-11 are examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
-
1. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark 4,784,069 in view of Hardeveid 4,408,046. Stark teaches a process of extracting heat from chemical process furnace flue gases (see fig 1), which is the same problem the current application is addressing. Stark teaches the invention as claimed (fig 1), an

apparatus for the extraction of energy from flue gases of a chemical process furnace 1, the apparatus comprising a first heat exchange unit in which the flue gases are heat exchanged with a first process stream at 5 (column 3 line 22-23), a second heat exchange unit wherein the flue gases exchange heat with a process stream (at 11), a third heat exchange unit 10 which is in contact with the flue gases as 10 is in fig 1. Stark's furnace is operated by combustion, producing flue gases (column 3 lines 18-23)

However, Stark does not specifically teach that the furnace is a salt furnace for production of melamine and in the first heat exchange step the flue gases exchange heat with molten salt; but Stark's furnace is capable of being used for melamine production.

Hardeveid teaches a process for making melamine comprising a first heat exchange unit where the flue gases exchange heat with molten salt.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stark's unit by exchanging heat with molten salt in the first unit in order to produce molten salt for any applications including making melamine.

With regard to the recitation "so as to provide heated salt which serves as a process heat supply in a process for the production of melamine" this is deemed a statement of intended use. Therefore the limitation is given no patentable weight. *In re Otto*, 312 F.2d 937, 938 136 UPSQ 458, 459 (CCPA 1963). MPEP 2111.02 II.

Claims 1, 3, 4, 6, 10, 8, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Hardeveid and further in view of Wood et al

6,599,119. Stark teaches the invention as claimed (see fig 1), a chemical process which is capable of being used for the production of melamine using a furnace that is operated with a fuel resulting in flue gases, the process comprising, a first heat exchange step in which the flue gases are heat exchanged with a first process stream in 1 with unit 5 (column 3 line 22-23), a second heat exchange step after the first heat exchange step wherein the flue gases are heat exchanged with a second process stream at 11, and a third heat exchange step wherein the flue gases are heat exchanged with another fluid at 10 (see fig 1). Stark also teaches (claim 6) a fourth heat exchange step wherein process stream is heat exchanged (at 13) with flue gases at a lower temperature than the process stream (fig 1). The stream at 13 is supplied at a higher temperature than the flue gases since the stream at 13 are fresh hot combustion gases and the flue gases have already lost heat at 5 and 11. With regard to claim 10 the units 5, 10 and 11 are all in contact with the flue gases (see fig 1).

However Starks does not teach, the furnace being a salt furnace, the second exchange step wherein the flue gases exchange heat with ammonia or urea and a third exchange step wherein the flue gases exchange heat with fresh air.

Hardeveid teaches a process for making melamine comprising (claim 3) a salt furnace 9, (claim 4, 5) first heat exchange step where the flue gases exchange heat with molten salt in the furnace 9 (column 3 lines 61-63).

Wood teaches a process of extracting energy from flue gases (figs 1-4), (claim 1, 9) wherein the flue gases are extracted and used to heat the incoming combustion air

which is fresh air (fig 2 column 4 line 22-24); and (claim 4, 8, 11) wherein the flue gases exchange heat at the heat exchange unit 120 (fig 4) with ammonia 121.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stark's process plant by making the first process stream molten salt, the second process stream ammonia and third process stream fresh air in order to improve energy efficiency in any chemical process that uses heated ammonia as well as increase efficiency by preheating the combustion air with flue gases.

With regard to claim 1 the recitation "the process for the production of melamine" is given little patentable weight because this recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process, the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. In this application the invention is the process of extracting energy from flue gases as stated in the first line of claim 1, the title of the invention and the statement of the objectives and not the process of producing of melamine. See *In re Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951) MPEP 2111.02 ii.

Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stark in view of Hardeveid and Wood and further in view of Westfall 2,943,088.

Stark in view of Hardeveid and Wood teaches the invention as claimed except for the flue gases exchanging heat with urea in the second heat exchange step.

Westfall discloses a processing plant wherein urea is heated in a kiln (heat exchanger) by flue gases (from flames) (column 3 line 58-63 and column 4 line 60-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stark in view of Hardeveid and Wood's process by including the extraction of heat from the flue gases (at the second step) by using flue gases to heat urea in order to optimize energy use in the plant that uses hot urea.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-11 have been considered but are moot in view of the new grounds of rejection. Applicant's arguments with respect to Stark or Wood not teaching the production of melamine has been considered but not found persuasive. Applicant's invention addresses problem of extracting heat from combustion flue gases and the references are addressing the same problem. The fact that the applicant is extracting heat for the production of melamine is deemed a matter of intended use. Stark teaches a chemical process plant in which heat is extracted from the combustion flue gases. Stark's plant is capable of being used to heat streams that are used in the production of melamine.

After due consideration it is determined that Applicant's claims do not distinguish Applicant's invention over the prior art of record

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUKA C. NDUBIZU whose telephone number is (571)272-6531. The examiner can normally be reached on Monday - Friday 8.30 - 4.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Rinehart can be reached on 571-272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuka C Ndubizu/
Examiner, Art Unit 3743

/Kenneth B Rinehart/
Supervisory Patent Examiner, Art
Unit 3743

20081202